MITSKEVICH, P.K.; SOLODOVNICHENKO, I.M.

On an effect of the movement of dielectric liquids in an inhomogeneous electric field. Zhur.fiz.khim. 39 no.11:2664-2667 N '65. (MIRA 18:12)

MITSKEVICH, P.K. [Mitskevych, P.K.]; PROTOPOPOV, A.A. [Protopopov, O.O.]

Role of polarization effects in measuring the pulse conductivity and the breakdown strength of n-hexane. Ukr. fiz. zhur. 10 no.3:342-343 Mr '65. (MIRA 18:6)

1. Dnepropetrovskiy inzhenerno-stroitel'nyy institut.

L 8565-66

ACCESSION NR: AP5021185

ductivity at room temperature and decreases the activation energy. The transition from the solid to the liquid state is accompanied by a jump-like increase in the conductivity. A linear relation has been established between the logarithm of the conductivity jump and the melting points of all the investigated compounds. A linear relation was observed between the thermal activation energy and the pre-exponential factor for the conductivity of organic compounds having conductivities in the range of 10^{-12}--10^{-15} $ohm^{-1}cm^{-1}$. "The authors thank I. D. Rozenshteyn for useful directions." Orig. art. has: 2 figures and 1 table.

ASSOCIATION: Dnepropetrovskiy inzhenerno-stroitel'nyy institut (Dnepropetrovsk Construction Engineering Institute) 44,55

SUBMITTED: 23Jan65 ENCL: 00 SUB CODE: GS

NR REF SOV: 006 OTHER: 007

jw

Card 2/2

L 8565-66 EWT(l)/EWT(m)/EWP(j)/EWA(h)/T IJP(c) AT/RM

ACCESSION NR: AP5021183 UR/0139/65/000/004/0151/0155

AUTHOR: Mitskevich, P. K.; Bashmakova, M. I.

TITLE: Investigation of the electrical conductivity of organic semiconductors on melting

SOURCE: IVUZ. Fizika, no. 4, 1965, 151-155

TOPIC TAGS: electric conductivity, organic semiconductor, temperature dependence, activation energy, absorption spectrum

ABSTRACT: The electrical conductivity of fifteen organic compounds has been studied at their melting point. The temperature variation of the electrical conductivity was exponential for all the compounds in both the solid and liquid state. The activation energy of the conductivity and the pre-exponential factor were determined for both states. The semiconductor nature of the conductivity was observed in both states. A comparison of the calculated values of the thermal energy of activation of solid naphthalene, anthracene, phenanthrene, and benzanthrone with the long-wavelength fall-off of the absorption spectra indicates the singlet excited states of their molecules take part in the dark conductivity. It is shown that introduction of heteroatoms of nitrogen, the methyl radical, and the OH group which gives rise to hydrogen bonding into an aromatic molecule increases the con-

Card 1/2

MITSKEVICH, P.K.; PROTOPOPOV, A.A.

Electric conductivity of liquid dielectrics in strong electric fields. Elektrokhimiia 1 no.10:1187-1195 O '65. (MIRA 18:10)

1. Dnepropetrovskiy inzhenerno-stroitel'nyy institut.

ACCESSION NR: AP4041757

for conduction in the vicinity of the melting point for the solid and liquid states was determined. The logarithm of the ratio of conductivities in the liquid and the solid states at the melting point was a linear function of the melting point. On cooling of the compounds after superheating 20—40C above the melting point, conductivity changed irreversibly. This irreversible change corresponds to the region of supercooling. The results are interpreted in terms of changes in the energy spectrum of the compounds and in terms of the Ya. I. Frenkel' theory of the mechanism of melting (Ya. I. Frenkel', Kineticheskaya teoriya zhidkostey (Kinetic Theory of Liquids), Izd-vo AN SSSR, 1945). This work was done at the Dnepropetrovsk Construction Engineering Institute. Orig. art. has: 3 figures and 1 table.

ASSOCIATION: Dnepropetrovskiy inzhenerno-stroitel'nyy institut (Dnepropetrovsk Construction Engineering Institute)

SUBMITTED: 25Feb63 ATD PRESS: 3066 ENCL: 00

SUB CODE: SS, EM NO REF SOV: 004 OTHER: 003

Card 2/2

ACCESSION NR: AP4041757 S/0076/64/038/006/1606/1608

AUTHOR: Mitskevich, P. K.; Bashmakova, M. I.

TITLE: Changes in the electrical conductivity of certain organic semiconductors on melting

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 6, 1964, 1606-1608

TOPIC TAGS: organic semiconductor, electrical conductivity

ABSTRACT: A study has been made of the temperature dependance of the electrical conductivity of naphthalene, anthracene, phenanthrene, acridine, phenazine, α- and β-naphthoquinoline, o-phenanthroline, and benzanthrone in the solid and the liquid states. This research was done because of the paucity of data on the conductivity of simple organic compounds in the vicinity of the melting point. In the vicinity of the melting point, the dependence of log(conductivity) (log σ) of the compounds in the solid and the liquid state was a linear function of reciprocal absolute temperature. On melting, σ jumped by more than one order of magnitude. The activation energy

Card 1/2

33672
S/058/61/000/012/037/087
A058/A101

9.4177 (1035)

AUTHORS: Mitskevich, P. K., Bobyl', V. G., Kopylov, Yu. A.

TITLE: Effect of temperature on photoconductivity of chloroform, bromoform and iodoform solutions in ethyl ether

PERIODICAL: Referativnyy zhurnal, Fizika, no. 12, 1961, 285, abstract 12D80 ("Sb. nauchn. tr. Dnepropetr. inzh.-stroit. in-t", 1960, no. 9, 139-142)

TEXT: The effect of temperature (from +16° to -16°C) on the value of photoconductivity (Φ) and the character of attainment of a steady photocurrent value were studied in chloroform, bromoform and iodoform solutions in ethyl ether. Φ increases with increasing temperature. The temperature dependence of Φ for organic solutions that was obtained theoretically earlier was substantiated: $\Phi = (A/T)\exp(-B/T)$, where A and B are constant coefficients for constant values of the electric-field strength and incident-light intensity.

V. Lyubin

[Abstracter's note: Complete translation]

Card 1/1

30412

Comparison of some properties of solid and liquid ... S/058/61/000/009/030/050
A001/A101

(the law holds at changes of temperature T and intensity of irradiation). For II, $\Delta\sigma$ is higher by $10^2 - 10^3$ times than for I. $\Delta\sigma \sim \mathcal{E}^{\gamma}$ ($\mathcal{E}$ is intensity of irradiation; $0.5 \leq \gamma \leq 1$). It is shown that $\lg \Delta\sigma \sim 1/T$.

V. K.

[Abstracter's note: Complete translation]

Card 2/2

30412

21.7100

S/058/61/000/009/030/050
A001/A101

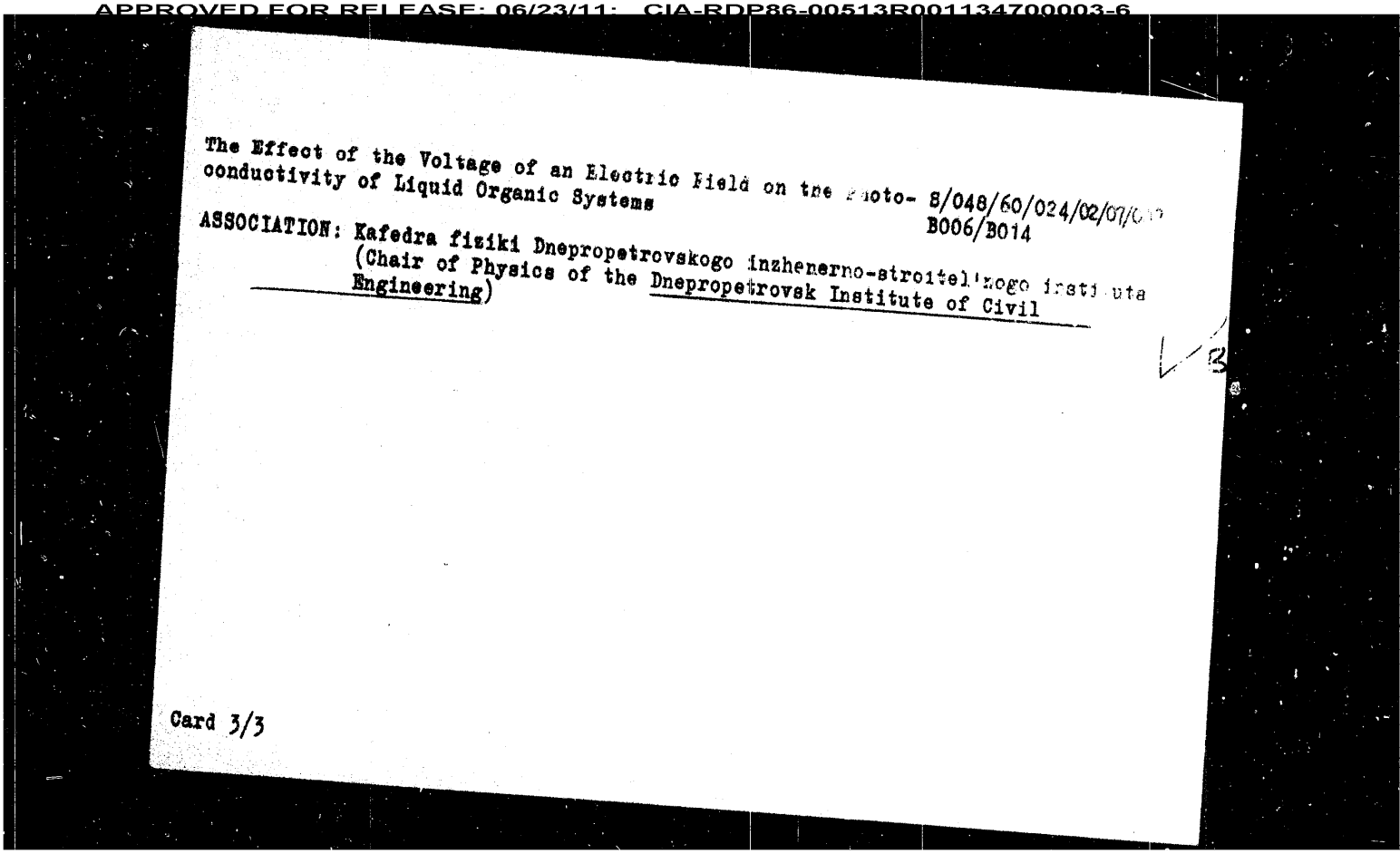
AUTHORS: Kolomoytsev, F.I., Mitskevich, P.K., Bobyl', V.G., Yakunin, A.Ya.

TITLE: Comparison of some properties of solid and liquid dielectrics subjected to irradiation

PERIODICAL: Referativnyy zhurnal. Fizika, no. 9, 1961, 201, abstract 9E157 (V sb. "Fizika dielektrikov", Moscow, AN SSSR, 1960, 510 - 517)

TEXT: Experimental dependences of electric conductivity σ on irradiation of solid dielectrics (I) (mica, quartz, polyethylene, polystyrene, polytetrafluoroethylene, polymethyl methacrylate, etc) were compared with those of liquid dielectrics (II) (chloroform, bromoform-ether, bromoform-anisole, iodoform-ether, chlorophenol, bromobenzene, etc). It was found that increase of σ during irradiation and decrease at discontinuation of irradiation was caused by fixing charge carriers on metastable levels with their subsequent thermal liberation. Additional $\Delta\sigma$ (at irradiation) depends on the nature and intensity of irradiation and on the purity of the dielectric. After discontinuation of irradiation $\Delta\sigma$ decreases with time proportional to $t^{-\alpha}$ (liberation of charge carriers from metastable levels). $\Delta\sigma$ is proportional to field strength up to fields with 10^4 v/cm

Card 1/2



The Effect of the Voltage of an Electric Field on the Photo- S/048/60/024/02/07/0
conductivity of Liquid Organic Systems B006/B014

ASSOCIATION: Kafedra fiziki Dnepropetrovskogo inzhenerno-stroitel'nogo instituta
(Chair of Physics of the Dnepropetrovsk Institute of Civil Engineering)

Card 3/3

electrical- and photoconductivity. These measurements of conductivity were made under direct current by means of an electrometer described in Ref. 3. The ultraviolet light source was a mercury quarts lamp of the type SVDSh-250 with an IG spark generator. A filter served for the separation of narrow spectral sections in the ultraviolet, and a UM-2 monochromator in the visible region. Fig. 1 shows the measured volt-ampere characteristic of a pure liquid, the various parts of which are discussed. Experimental results concerning the influence of the field on photoconductivity are reproduced in Figs. 2a and 2b. Figs. 3a and 3b illustrate the influence of the concentration (in %) on the course of the curves $I_c(E)$ - (I_c - photoelectric current). The curves are straight lines, their angle of slope is the larger the higher the concentration (all diagrams shown here are referred to solutions of propyl bromide and bromophenol in ethyl alcohol). The dependence of the tangent of the angle of slope of the straight line $I_c(E)$ on the concentration for solutions of propyl bromide, bromophenol, and ethyl iodide in ethyl ether is illustrated in Fig. 4. The curves $\tan \alpha = f(\lg C)$ all have distinct peaks. Investigation results are indicative of the fact that dark conductivity and photoconductivity are independent of E. G. I. Skanavi and A. Nikuradze are mentioned. There are 4 figures and 9 Soviet references.

Card 2/3

S/048/60/024/02/07/009
B006/B014

AUTHORS: Mitskevich, P. K., Bobyl', V. G.

TITLE: The Effect of the Voltage of an Electric Field on the Photoconductivity of Liquid Organic Systems

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1960, Vol. 24, No. 2, pp. 232 - 236

TEXT: The article under review was read at the Second All-Union Conference on the Physics of Dielectrics (Moscow, November 20 - 27, 1958). Organic liquids with a slight polarity can be regarded as ionic semiconductors; the investigation of their electric properties has not only a theoretical but also a practical importance, since they are used e.g. as liquid scintillation counters, in bubble chambers and otherwise. In recent years, the authors conducted systematic investigations of various organic liquid semiconductors (Refs. 3 - 5). It was also attempted of late to use them as diodes, triodes, and photoresistors. A large category of the semiconductors investigated exhibited good photoconductivity. The investigation of the action of light on high-purity organic liquids and liquid binary systems included a study of the influence of an electric field on

Card 1/3

VOSKOBOYNIKOV, V.G.; KHROMOV, V.A.; REBEKO, A.F.; MKRTCHAN, L.S.; MITSKEVICH, O.V.; BIRMAN, A.I.

Mathematical analysis of certain design parameters of thermal conditions of the blast furnace process. [Sbor. trud.] TSNIICHM no.29:9-23 '63. (MIRA 17:4)

1. TSentral'nyy nauchno-issledovatel'skiy institut chernoy metallurgii (for Voskoboynikov, Khromov, Rebeko, Mkrtchan). 2. TSentral'nyy nauchno-issledovatel'skiy institut kompleksnoy avtomatizatsii (for Mitskevich, Birman).

137-58-6-11462

Measurement of the Temperature (cont.)

pouring as well. A table of optimum temperatures at various times during the heat is given.

M.L.

1. Temperature--Measurement 2. Steel--Temperature factors 3. Thermocouples--Applications

Card 2/2

137-58-6-11462

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 30 (USSR)

AUTHORS: Mitskevich, O.V., Marinov, A.I.

TITLE: Measurement of the Temperature of Molten Steel by Means of Immersion Thermocouples at the Zaporozhstal' Plant (Zamer temperatury zhidkoy stali pri pomoshchi termopar pogruzheniya na zavode "Zaporozhstal'")

PERIODICAL: Byul. nauchno-tekhn. inform. Ukr. n.-i. in-t metallov, 1957, Nr 3, pp 33-38

ABSTRACT: Special features of the design of W-Mo thermocouples used in the open-hearth department of the plant to measure the temperature of molten steel are described: the use of heat-stable coating (blast-furnace ball stuff with 10% added asbestos); the presence of apertures in the uncoated portion of the hood to eliminate condensation within the housing, reducing cases of damage from 30-40% to 2-3% (in winter); use of the same kind of W and Mo wires, in vinylchloride insulation, as lead wires. Temperature measurement is conducted in all heats at the start of the period of pure effervescence and before deoxidation, while in the case of rimmed-steels it is done at the time of

Card 1/2

MITSKEVICH, N.V.

Four-dimensional symmetric canonical formalism in field theory. Izv. vys. ucheb. zav.; fiz. 8 no.6:87-92 '65.
(MIRA 19:1)

1. Universitet Druzhby narodov imeni Patrisa Lumumby.
Submitted June 27, 1964.

MITSKEVICH, N.V.

Spinor electrodynamics of interacting charges. Doklady AN SSSR 17 no.6: 543-544 '64.

1. Patrice Lumumba University of Peoples Friendship, Moscow.

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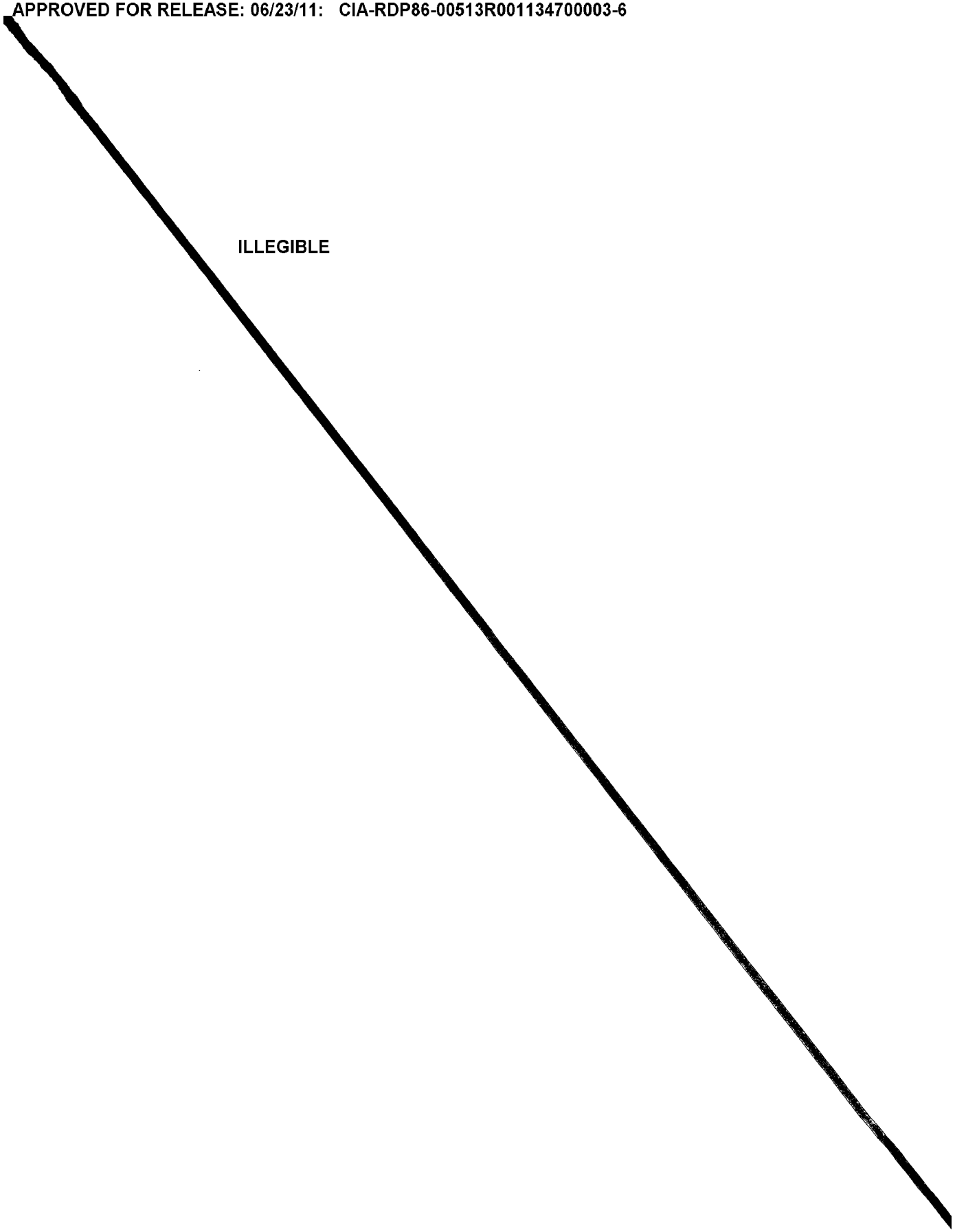

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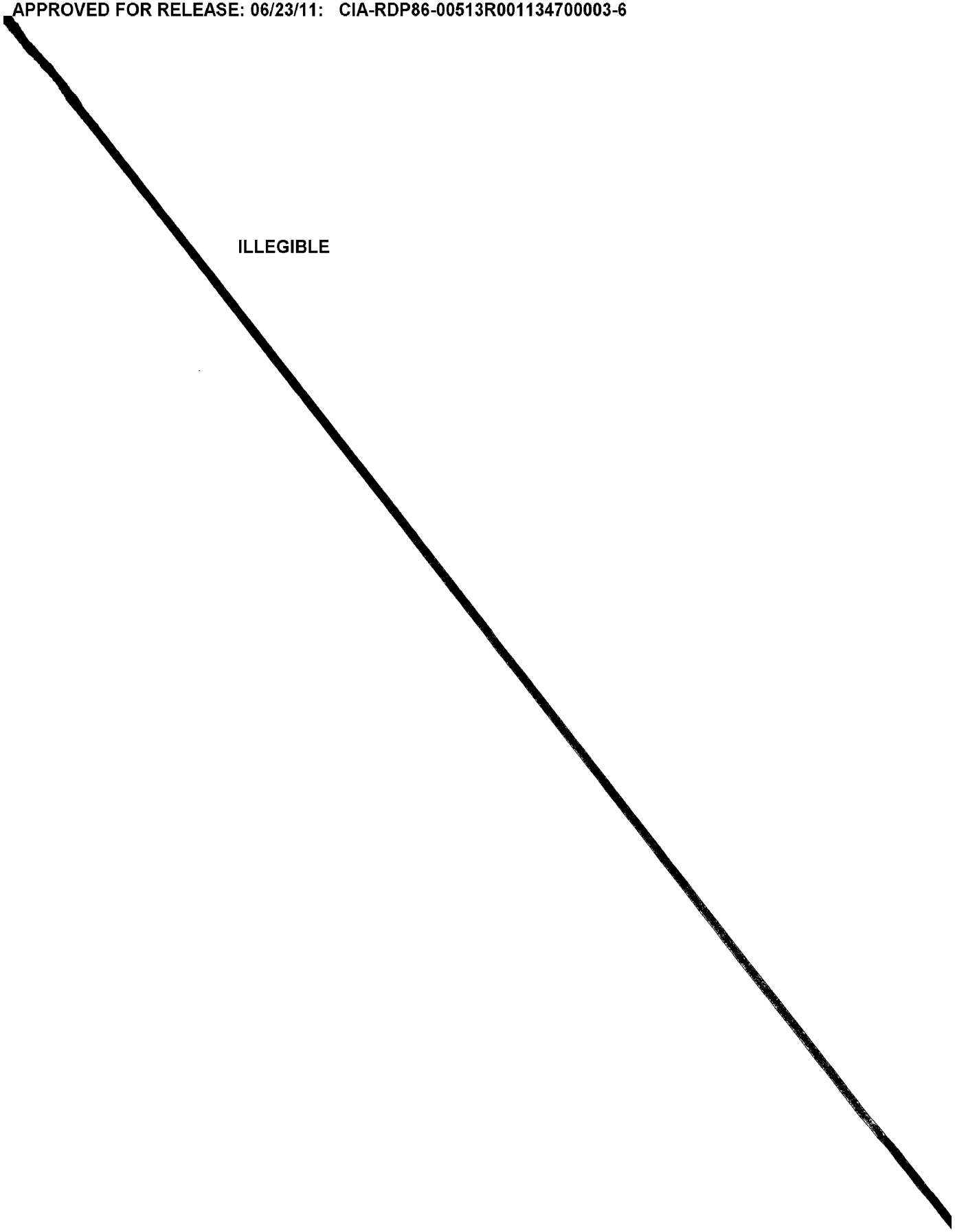


S/058/63/000/001/038/120
A062/A101

($T_{\mu\nu} = 0$, $g_{\mu\nu} = \delta_{\mu\nu} + h_{\mu\nu}$, Λ - cosmological constant) is not correct since the approximation of a weak field is not applicable to Einstein's equation with a cosmological term. It is also shown that the equation of a field, whose potential is a scalar density, is in principle different from the Klein-Gordon equation for a scalar field. In the case of a weak gravitational field the utilization of the complementary conditions allows the elimination of the gravitational field, thereby leading to the appearance of effective non-linearity. The obtained equation resembles equations of non-linear mesodynamics from which it differs by a term that is non-linear in derivatives of the potential.

Yu. K.

[Abstracter's note: Complete translation]

S/058/63/000/001/038/120
A062/A101

AUTHOR: Mitskevich, N. V.

TITLE: Approximation of a weak gravitational field and some general relativistic field equations

PERIODICAL: Referativnyy zhurnal, Fizika, no. 1, 1963, 13 - 14, abstract 1B108 ("Tr. Samarkandsk. un-ta", 1962, no. 117, 33 - 40)

TEXT: In the approximation of a weak gravitational field the possibility is investigated of carrying out an analogy between Einstein's equation with a cosmological term and Poisson's equation. Complementary conditions are taken in the form of Hilbert's coordinate conditions, closely connected to the harmonicity conditions of de Donde-Lanczos-Fock. It is shown that the presentation of Einstein's equation

$$R_{\mu\nu} - \Lambda g_{\mu\nu} = -8\pi(T_{\mu\nu} - 1/2 T g_{\mu\nu})$$

in the form

$$\Box h_{\mu\nu} + 2\Lambda h_{\mu\nu} = -2\Lambda g_{\mu\nu}$$

Card 1/2

UILER, Dzh.A.[Wheeler, John A.]; MITSKEVICH, N.V.[translator]; IVANENKO, D., red.; LARIN, S.I., red.; RYBKINA, V.P., tekhn. red.

[Gravitation, neutrinos, and the universe]Gravitatsiia, neitrino i Vselennaia. Pod red. D.Ivanenko. Moskva, Izd-vo inostr. lit-ry, 1962. 403 p. Translated from the English. (MIRA 15:12)
(Gravitation) (Neutrinos) (Cosmology)

L 19329-63

ACCESSION NR: AR3002048

$$\Box h_{\mu\nu} + 2\Lambda h_{\mu\nu} = -2\Lambda g_{\mu\nu}$$

$$(T_{\mu\nu} = 0,\ g_{\mu\nu} = \delta_{\mu\nu} + h_{\mu\nu},$$

where Λ is the cosmological constant) is not correct, since the approximation of a weak field is not adaptable to Einstein's equation with a cosmological member. It is shown further that a field equation whose potential is a scalar density, is in principle different from the Klein-Gordon equation for a scalar field. In the case of a weak gravitational field, the use of supplemental conditions makes it possible to exclude the field, and this leads to the appearance of the nonlinearity effect. The equation obtained resembles the equations of nonlinear mesodynamics, being distinguished from them by a term which is not linear with respect to derivatives of the potential.

DATE ACQ: 30May63

SUB CODE: AI

ENCL: 00

Card 2/2

L 19329-63 EWT(1)/FCC(w)/BDS/ES(v) AFFTC/ASD/ESD-3/IJP(C) Pe-4 GW

ACCESSION NR: AR3002048 S/0269/63/000/005/0072/0072

SOURCE: RZh. Astronomiya. Otdel'nyy vypusk. Abs. 5.51.563

AUTHOR: Mitskevich, N. V.

TITLE: The approximation of a weak gravitational field and certain general relativistic field equations

CITED SOURCE: Trudy Samarkandskogo universitita, no. 117, 1962, 33-40

TOPIC TAGS: weak gravity field, Einstein equation, Hilbert coordinate condition

TRANSLATION: In approximating a weak gravitational field, the author studies the possibility of drawing analogies between Einstein's equation with cosmologic term and Poisson's equation. Supplemental conditions are imposed in the form of Hilbert's coordinate conditions, closely associated with deDonde-Lanchos-Foch harmonicity. It is shown that the presentation of Einstein's equations

$$R_{\mu\nu} - \Lambda g_{\mu\nu} = -8\pi\left(T_{\mu\nu} - \tfrac{1}{2}Tg_{\mu\nu}\right)$$

in the form

Card 1/2

MITSKEVICH, N. V.

"On Localizability of Gravitational Energy"

"A Four Dimentional Symmetrical Canonical Formalism in the Field Theory"

report presented at the Intl. Conference on Relativistic Theories of Gravitation, Warsaw, Poland, 25-31 July 1962.

Chair of General Physics, Lumumba Peoples' Friendship University, Moscow.

S/058/62/000/005/011/119
A001/A101

AUTHOR: Mitskevich, N. V.

TITLE: On transformation properties of some physical quantities in the general theory of relativity

PERIODICAL: Referativnyy zhurnal, Fizika, no. 5, 1962, 26, abstract 5A257 ("Dokl. Bolg. AN", 1961, v. 14, no. 5, 439-442, English summary)

TEXT: The author investigates transformation properties of momentum-energy tensor, pseudo-tensor, generalized spin and other characteristics of gravitational field with respect to infinitesimal coordinate transformations of the form:

$$x'^{\mu'} = x^{\mu} + \tilde{\delta} x^{\mu}.$$

[Abstracter's note: Complete translation]

Card 1/1

Taking into Account Gravitational Energy SOV/56-37-3-49/62

The authors think it more natural to regard the sum of canonic (unsymmetrical) quasi-tensors of all fields as the energy-momentum density of the total system of the fields and not the sum of the symmetrical tensor of the fields of ordinary matter and of the canonic quasi-tensor of the field of gravity. The opinion of the author corresponds also to the generally covariant bases of the second quantization. There are 6 references, 4 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: May 30, 1959

Card 4/4

"pseudotensor" of the energy momentum of the total system of fields introduced by Møller and

$\mathcal{U}_\beta^\alpha$ (grav) the value of the spin part of the energy of the gravitational field derived by the authors. This quantity has the necessary gravitational properties also for other fields (invariance of the integral energy in purely spatial transformations which do not refer to time). The tensor determined by the authors agrees with the expression by Levi-Civita also for the total system of the fields. For this reason the following relation holds: $\mathcal{T}_\beta^\alpha$ (sym)(tot) = $\mathcal{A}_\beta^\alpha$ (tot) + $\mathcal{U}_\beta^\alpha$(tot) = 0

Therefrom it may be concluded that

$\mathcal{A}_\beta^\alpha$(f) = $\mathcal{A}_\beta^\alpha$(grav) = - ($\mathcal{U}_\beta^\alpha$(f) + $\mathcal{U}_\beta^\alpha$(grav)), where $\mathcal{A}_\beta^\alpha$(f) and $\mathcal{A}_\beta^\alpha$(grav) belong to ordinary fields in the presence of gravitation and to a pure field of gravity, respectively.

Lorentz and Levi-Civita suggested other definitions of the energy-momentum density. The tensor of all fields which they suggested and which is accurately conserved has no great physical importance. C. Møller (Refs 2, 3) supplied a new expression (and the corresponding exclusion proof) for the total energy of the systems of gravitational fields and other fields with the elimination of the above difficulty. On the other hand, quantities are obtained by the new formulation of Noether's theorem (which was derived earlier by the authors (N. V. Mitskevich, Ref 4)) which are conserved when applied to the field of gravity. These quantities differ from those derived by Einstein and - as will be shown in the present paper - are closely connected with the pseudotensor derived later by Møller. In this connection gravitation and the other fields are dealt with in the same way. The gravitational field is defined by a metric tensor so that particles with spin are bound to correspond to it. On the basis of the expressions derived by Møller and N. V. Mitskevich (Ref 4) the relation

$\gamma_\beta^\alpha = -\mathcal{U}_\beta^\alpha$ (grav) is easily obtained. γ_β^α denotes the

AUTHORS: Ivanenko, D. D., Mitskevich, N. V. SOV/56-37-3-49/62

TITLE: Taking into Account Gravitational Energy

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 37, Nr 3(9), pp 868-869 (USSR)

ABSTRACT: The determination of the energy and momentum of the gravitational field (which is especially necessary for the conversion of these quantities into the energy and momentum of other fields) has met with serious difficulties already since the foundation of the general theory of relativity. The difficulties are due to the fact that the equation of continuity gets the physical meaning of a divergence brought about by the disappearance of the usual, but not covariant divergence. The authors denote the law of conservation in the disappearance of the usual divergence an exact law of conservation. The "pseudotensor" of the exactly conserved energy-momentum density of the gravitational field introduced by Einstein is, on the one hand, no generally covariant quantity, on the other, the energy defined by this quantity considerably depends on the selection of the reference systems which are in connection with the purely spatial coordinate transformations at invariable time. For this reason,

The Nonlinear Vacuum Effect in the Gravitation Theory SOV/56-36-4-36/70

for the cosmological constant. In the following the additional scattering of gravitons in the Schwarzschild field by vacuum scalar particles is investigated. It was found that this effect is theoretically comparable with the nonlinear effect in the classical theory at low gravitation energies. Formulas are given for the cross sections at m=0 and m≠0. For the critical graviton wave length at m≠0 $\lambda_c = (8\pi^2 \hbar/kmL)\sqrt{\hbar/c}$ is obtained. The author finally thanks D. D. Ivanenko, M. M. Mirianashvili, and A. M. Brodskiy for their interest in this work and for discussions, and he also thanks A. D. Danilov for his help in carrying out calculations. There are 14 references, 9 of which are Soviet.

ASSOCIATION: Uzbekskiy gosudarstvennyy universitet (Uzbek State University)

SUBMITTED: October 14, 1958

Card 2/2

24(5)

AUTHOR: Mitskevich, N. V. SOV/56-36-4-36/70

TITLE: The Nonlinear Vacuum Effect in the Gravitation Theory (Vakuumnyy nelineynyy effekt v teorii gravitatsii)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 4, pp 1207-1211 (USSR)

ABSTRACT: In the present paper the author investigates the problem of the interaction of gravitation- and scalar field within the framework of a unified nonlinear field theory and compares the bare and the vacuum nonlinearity of gravitation. On the basis of the results obtained (Refs 9 - 12) it is shown that the second quantization leads to a new interaction between the gravitons by virtual quanta of other fields. In the case of a scalar field of a slowly varying metric a vacuum additional term of the type of a cosmological term occurs in the gravitation Lagrangian. The latter is investigated by means of the Schwinger method and an expression is derived for the vacuum Lagrangian $\mathcal{L}_{vac}(x) = \frac{\sqrt{-g}}{32\pi^2} \int_{\tau_0}^{\infty} d\tau \, \tau^{-3} e^{-m^2\tau}$

Card 1/2

MITSKEVICH, N.V.

Vacuum contribution of an electromagnetic field to a Langrange gravitation equation. Dokl. AN Uz. SSR no.9:14-17 '59.
(MIRA 13:1)

1.Uzbekskiy gosuniversitet im. Alishera Navoi. Predstavleno akademikom AN UzSSR S.V. Starodubtsevym.
(Gravitation) (Electromagnetism)

The Consequences of the Demand of Invariance of the Lagrangians in the General Covariant Field Theories

68042
SOV/55-59-3-9/32

(Ref 6). The author thanks Professor D. D. Ivanenko for his constant interest in the present paper, Professor Kh. Ya. Khristov for much useful critical advice, and Professor Yu. B. Rumer and Doctor E. Shmuttser for interesting discussions. There are 6 references, 4 of which are Soviet.

ASSOCIATION: Kafedra statisticheskoy fiziki i mekhaniki (Chair for Statistical Physics and Mechanics)

SUBMITTED: June 11, 1957

Card 4/4

then postulated, and with its help the Lagrangians of the gravitational field and of the electromagnetic field are then determined. This principle of simplicity reads as follows: 1) L must be a function of the minimum possible number of variables. 2) L must be a function of the lowest order of these variables. 3) The mass term (which is the term not dependent on the derivatives of the potentials) is omitted if it is not necessary for invariance. In the case of the gravitational Lagrangian, it is possible, without using the second derivatives of the metric tensor, to "construct" only one vanishing invariant, which equals zero. Expressions are then written down for the fundamental quantities of the gravitational field: spin, spin-energy, symmetric energy-momentum-tensor, canonical quasi-tensor. For electrodynamics $\frac{\partial L_e}{\partial A_{\tau,\alpha}} + \frac{\partial L_e}{\partial A_{\alpha,\tau}} = 0$ and $L_g = -\frac{1}{2} H_{\mu\nu} H_{\alpha\beta} g^{\mu\alpha} g^{\beta\nu}$ holds. Also for the electromagnetic field expressions are written down for the generalized spin, the spin-energy, the symmetric energy-momentum tensor, and the canonical quasitensor. Attention is drawn to the nonlinearity appearing in a paper by D. Ivanenko

Card 3/4

The Consequences of the Demand of Invariance of the Lagrangians in the General Covariant Field Theories

SOV/55-59-3-9/32

general-invariant form being first determined. The author finds a natural classification of these laws and also derives several new laws of conservation. The field equations and the equations of the gravitational field read $\frac{\delta L_t}{\partial A_B} = \frac{\delta L_f}{\partial A_B} = 0$ and $T_t^{\mu\nu} - T_f^{\mu\nu} + T_g^{\mu\nu} = 0$, respectively; the conservation of T is given by $T^{\mu\nu}{}_{;\nu} = 0$. The spin energy is used for the symmetrization of the canonical quasitensor. The density of the scalar curvature may be subdivided into two summands, one of which has the form of a divergence, and the other contains no second derivatives of the metric tensor. These two summands are affine scalars. Several new coordinate transformations of various complexity lead to laws of conservation for "bimoments", "multimoments", etc. If the second derivatives in the Lagrangian are linear, and if their coefficients represent no derivatives of the potential but only the potential itself, the equations resulting herefrom are of no higher than of the second order. Therefore, the gravitational field is an example. The principle of simplicity is

24.4400
~~24 (5)~~

68043

AUTHOR: Mitskevich, N. V.

SOV/55-59-3-9/32

TITLE: The Consequences of the Demand of Invariance of the Lagrangians in the General Covariant Field Theories

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya matematiki, mekhaniki, astronomii, fiziki, khimii, 1959, Nr 3, pp 63 - 70 (USSR)

ABSTRACT: The author first endeavors to express the invariance of a certain potential function and of its first derivatives as well as the invariance of the metric tensor and its first two derivatives analytically. The field potentials are denoted by A_B, where the index B runs over all wave functions. The condition for the invariance of the function $L(A_B, A_{B,\alpha}, g_{\mu_1\nu\alpha}, g_{\mu\nu,\alpha\beta})$, $\delta L = 0$ may be written down in the form $\delta^* \sqrt{-g}\, L + \frac{\partial}{\partial x^\alpha}(L\delta x^\alpha) = 0$, where $L = \sqrt{-g}\, L$ holds. The operations δ and δ^* are defined. The obviously sufficient necessity of the invariance of L for the invariance of the action integral is proved. Next, the consequences resulting from this invariance of the Lagrangian are investigated, the laws of conservation in

Card 1/4

MITSKEVICH, N. V., Cand Phys-Math Sci -- (diss) "Some principles and effects of gravitation theory and non-linear field theory." Samarkand, 1959. 11 pp; (Tbilisi State Univ im I. V. Stalin, Physics Faculty); 200 copies; price not given; bibliography on pp 10-11 (18 entries); (KL, 24-60, 128)

The Scattering on a Schwartzschild Field in the Quantum Theory

SOV/56-34-6-48/51

ASSOCIATION: Moskovskiy gosudarstvennyy universitet (Moscow State University)

SUBMITTED: March 28, 1958

Card 3/3

The Scattering on a Schwartzschild Field in the Quantum Theory

SOV/56-34-6-48/51

(Shvartsshild) field - has a purely non-linear character. The author uses the usual expressions for the commutation relations of all fields, including the gravitation field. The matrix elements of the investigated processes are given explicitly and therefrom the differential cross-sections of the scattering of the quanta of a scalar, spinor, electromagnetic and gravitation field on a static spherically symmetrical gravitation field are derived. These cross-sections become equal one to another (independently of the spin) for small angles and for zero rest mass of the quanta. But for non-zero rest masses and also for large angles the different tensor dimensions of the potentials lead to rather different cross-sections. Generally, the existence of a mass enlarges the cross-sections and therefore the mass figuring in the equations has gravitational properties. The author thanks D.D.Ivanenko and M.M.Mirianashvili for the interest in this paper. There are 4 references, 3 of which are Soviet.

Card 2/3

SOV/56-34-6-48/51

AUTHOR: Mitskevich, N. V.

TITLE: The Scattering on a Schwartzschild Field in the Quantum Theory (Rasseyaniye na pole Shvartsshil'da v kvantovoy teorii)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958, Vol. 34, Nr 6, pp. 1656 - 1658 (USSR)

ABSTRACT: Investigating a metric which is similar to the Galilei metric, it may be written $g^{\mu\nu} = g^{\mu}\sqrt{-g} = \delta^{\mu\nu} - k\gamma^{\mu\nu}$; $k = \sqrt{16\pi\kappa}/c$; $\delta^{00} = -\delta^{11} = -\delta^{22} = -\delta^{33} = 1$. This makes it possible to expand the Lagrangians of each field with respect to the constant k. Explicit formulae of these expansions are given for the scalar (pseudoscalar), spinor, electromagnetic and gravitation fields. By means of these formulae, expressions may be derived or the cross-sections of the scattering processes of the quanta of these fields on the static spherical gravitation field $\gamma^{\mu\nu}_{static} = \gamma^{\lambda}_{static\lambda}\delta^{\mu}_{0}\delta^{\nu}_{0}$; $\gamma^{\lambda}_{static\lambda} = -Mk/4\pi r$. One of these effects - the scattering of a graviton on the Schwartzschild

Card 1/3

EAST GERMANY/Theoretical Physics - Theory of Relativity. Unified Field Theory B-2

Abs Jour : Ref Zhur - Fizika, No 3, 1959, No 4829

to the latter are transformations of the type $\delta x^{\gamma} = x^{\sigma} \delta \Omega^{\alpha}_{\sigma\tau}$, $\delta \Omega^{\alpha}_{\sigma\tau}$ = const. The author next derives specific expressions for the lagrangians of the gravitational and electromagnetic field, showing thereby that these expressions are uniquely obtained if one addes certain natural simplicity requirements to the invariance requirement. In conclusion it is indicated that if this method is used to build up a Lagrangian for a field that is describable by a scalar or spinor density, then nonlinear equations are obtained for this field in the approximation of the special theory of relativity. -- P.G. Kard

Card : 2/2

MITSKEVICH, N.V.

EAST GERMANY/Theoretical Physics - Theory of Relativity. Unified Field Theory 3-2

Abs Jour : Ref Zhur - Fizika, No 3, 1959, No 4829

Author : Mizkjewitsch Nikolaj
Inst : Moscow State University
Title : Concerning the Invariance Properties of Lagrangian Functions of Fields

Orig Pub : Ann. Physik., 1958, 1, No 6-8, 319-333

Abstract : It is shown how it is possible, in the general theory of relativity to obtain laws of conservation, starting not with the invariance of the integral of action, as is usually done in the proof of the Neter theorem, but merely starting with the invariance of the Lagrangian. The author gives a classification of the quantities that are conserved with respect to the types of the infinitesimal transformations of the coordinates. If the Lagrangian contains derivatives of potentials not higher than second order, then the conserved quantities may be the energy, momentum, or bimomentum. Corresponding

Card : 1/2

MITSKEVICH, N. V.

USSR/Nuclear Physics - Nonlinear theory

FD-2972

Card 1/1 Pub. 146 - 13/28

Author : Mitskevich, N. V.

Title : Scalar field of a neutron at rest in the nonlinear theory

Periodical : Zhur. eksp. i teor. fiz., 29, September 1955, 354-361

Abstract : The author qualitatively investigates the properties of a nonlinear spherically symmetrical scalar potential. For the investigation he employs the method of Chaplygin and taking it into consideration he constructs an approximate numerical solution. He obtains a relation that relates the zero mass of a nucleon with its charge. He thanks Professor D. D. Ivanenko, who posed the present subject, and also Professor A. N. Tikhonov and V. V. Lebedev. Nineteen references: e.g. D. D. Ivanenko, D. Kurdgelaidze, S. Larin, DAN SSSR, 88, 245, 1953; A. Sokolov, D. Ivanenko, Kvantovaya teoriya polya, GTTI, 1952; S. A. Chaplygin, Novyy metod priblizhennogo integrirovaniya differentsial'nykh uravneniy [New method of approximate integration of differential equations], GTTI, 1950.

Institution : Moscow State University

Submitted : May 12, 1954

FD 420

MITSKEVICH, N. V.
USSR/Physics - Heat conduction

Card 1/1 Pub. 147-6/16

Author : Mitskevich, N. V.

Title : Certain problems in the theory of heat conduction of anisotropic solids

Periodical : Zhur. eksp. i teor. fiz. 26, 557-561, May 1954

Abstract : Investigates the equation of heat conduction written in tensor form for the case of an anisotropic solid. Especially typical is the solution obtained for nonbounded bounded. Derives formulas for employing the Green function to find the solution in the anisotropic case. Thanks V. R. Regel'.

Institution : Institute of Crystallography, Acad Sci USSR

Submitted : October 29, 1953

MITSKEVICH, N. Jul 53

USSR/Physics - Miscellaneous

"From Current Literature"

Usp Fiz Nauk, Vol 50, No 3, pp 439-479

Writers (usually identified by initials only) review current non-Soviet literature on: "Spectrum of Recoil Atoms at K-Capture"; "Ionization of K-Shell of Recoil Atoms During Alpha-Decay of Polonium"; "Cross Sections of Reactions Produced by Neutrons of 14.5 Mev Energy"; "Close Stars on Photo Plates Exposed in the Stratosphere"; "Application of Cherenkov Effect to Observations of Protons and Mesons" by N. Mitskevich; "Problem of the Resolving Power in Diffraction on Microscopy" by G. Rozenberg; "Measurements of Angular Diameters of Discrete Sources of Cosmic Radiation."

262T104

KONOPLYANNIK, M.M.; MITSKEVICH, N.I.

Decarboxylation and decarbonylation in the autooxidation of liquid paraffin hydrocarbons in the presence of various initiating additives. Khim. i tekh. topl. i masel 10 no.9:24-27 S '65.
(MIRA 18:9)

1. Institut fizicheskoy i organicheskoy khimii AN BSSR.

Dehydrogenation in dipentene...

observed that the gas composition remained unchanged throughout 11 hr in experiments in which I was heated at 80.5°C without initiator, as well as in the presence of 0.83 mmole of cobalt acetate in a nitrogen atmosphere. Analysis of the gas after the experiments revealed the absence of H_2, CO_2 and CO. It was found that the dehydrogenation of I takes place only with its autoxidation, and is therefore a combined process. [Abstracter's note: Complete translation.]

Card 2/2

5.3300

29438
S/081/61/000/017/112/166
B101/B102

AUTHORS: Mitskevich, N. I., Shcherbak, L. I.

TITLE: Dehydrogenation in dipentene autoxidation

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 17, 1961, 450, abstract 17M6(Sb. nauchn. rabot. In-t Fiz.-organ khimii AN BSSR, no. 8, 1960, 205-208)

TEXT: The dipentene (I) used for the experiments had a boiling point of 72 - 72.5°C at 20 - 22 mm Hg; n_D^{20} 1.4760; d_4^{20} 0.844. $Co(CH_3COO)_2 \cdot 4H_2O$ served as an initiator of autoxidation of I at 80.5°C. The gas was analyzed with a ВТИ-2(VTI-2) gas analyzer when the experiment was terminated. As much as 5-6% of gaseous products, referred to the amount of absorbed oxygen, among them CO_2, CO, and H_2, were separated in the autoxidation of I under the experimental conditions. Hydrogen is separated in a relatively larger amount if there is no initiator, its amount being directly proportional to the amount of the absorbed oxygen. The content of CO and CO_2 in gaseous products increases appreciably in the presence of cobalt acetate. It was

Card 1/2

MITSKEVICH, N.I.; KONOPLYANNIK, M.M.

Decarboxylation and decarbonylation associated with the autoxidation of solid paraffin hydrocarbons to acids. Sbor. nauch. rab. Inst. fiz.-org.khim. AN BSSR no.8 200-204 '60. (MIRA 14:3)

1. Institut fiziko-organicheskoy khimii AN BSSR.
(Carboxyl group) (Carbonyl group)(Paraffins)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134700003-6

SHCHERBAK, L.I.; MITSKEVICH, N.I.

Oxidation of liquid paraffin hydrocarbons in the presence of an alkali. Sbor. nauch. rab. Inst. fiz.-org. khim. AN BSSR no.8:194-199 '60. (MIRA 14:3)

1. Institut fiziko-organicheskoy khimii AN BSSR.
(Paraffins) (Oxidations)

MITSKEVICH, N.I.; SOROKO, T.I.; KONOPLYANNIK, M.M.

Decarboxylation associated with the autoxidation of liquid paraffin hydrocarbons. Sbor. nauch. rab. Inst. fiz.-org. khim. AN BSSR no.8:175-185 '60. (MIRA 14:3)

1. Institut fiziko-organicheskoy khimii AN BSSR.
(Hydrocarbons) (Carboxyl group) (Carbonyl group)

MITSKEVICH, N.I.; USKOV, I.I.

Decarboxylation associated with the autoxidation of isopropylbenzene by 1-C^{14}-isobutyric acid. Sbor. nauch. rab. Inst. fiz.-org. khim. AN BSSR no.8:168-174 '60. (MIRA 14:3)

1. Institut fiziko-organicheskoy khimii AN BSSR.
(Carboxyl group) (Cumene)

YEROFEYEV, B.V.; MITSKEVICH, N.I.; USKOV, I.I.

Conjugated decarboxylation in the autoxidation of isopropylbenzene in a mixture with butyric acid labeled with C^{14} in the carboxyl group. Dokl.AN BSSR 4 no.4:160-163 Ap '60. (MIRA 13:10)

1. Institut fiziko-organicheskoy khimii AN BSSR.
(Carboxyl group) (Benzene)

YEROFEYEV, B.V.; MITSKEVICH, N.I.; MAYOROVA, M.V.

Initiation of decarboxylation by anthracene. Sbor. nauch. rab. Inst. fiz.-org. khim. AN BSSR no.8:93-98 '60. (MIRA 14:3)

1. Institut fiziko-organicheskoy khimii AN BSSR.
(Anthracene) (Carboxyl group)

85545

5.3832 2209, 2109, 1153

S/081/60/000/020/002/014
A006/A001

Translation from: Referativnyy zhurnal, Khimiya, 1960, No. 20, p. 65, # 80295

AUTHORS: Mitskevich, N.I., Shcherbak, L.I.

TITLE: On Dimeric Products in Autoxidation of Cyclohexene

PERIODICAL: Sb. nauchn. rabot, In-t fiz.-organ. khimii AN BSSR, 1959, No. 7, pp. 33-42

TEXT: During oxidation of cyclohexene initiated with $Co(CH_3COO)_2 \cdot 4H_2O$ (25-50.3°C, atmospheric pressure of O_2) a resin-like viscous mass is separated out of the reaction products, which corresponds by molecular weight and O_2 content to a dimer of cyclohexene hydrogen peroxide. On the basis of an analysis of the oxidation products during extended storage it is concluded that the dimer is formed from the hydrogen peroxide and is the final product of its polymerization.

R. Milyutinskaya

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

MITSKEVICH, N.I.; SOROKO, T.I.; SHCHERBAK, L.I.

Autoxidation of mixtures of isopropylbenzene with cyclohexene and dipentene. Sbor. nauch. rab. Inst. fiz.-org. khim. AN BSSR no. 7:23-32 '59. (MIRA 14:4)

(Benzene) (Cyclohexene) (Dipentene)

Mitskevich, N.I.

PHASE I B[illegible] [illegible]TION SOV/366[illegible]

Akademiya nauk SSSR. Institut khimicheskoy fiziki

Okisleniye uglevodorodov v zhidkoy faze; sbornik statey (Oxidation of Hydrocarbons in the Liquid Phase; Collection of Articles) Moscow, Izd-vo AN SSSR, 1959. 334 p. Errata slip inserted. 2,200 copies printed.

Ed.: N. M. Emanuel', Corresponding Member, Academy of Sciences USSR; Ed. of Publishing House: K. M. Kyumayev; Tech. Ed.: L. F. Kuz'min.

PURPOSE: This collection of articles is intended for chemists interested in hydrocarbon oxidation reactions, particularly for those specializing in petroleum fuels.

COVERAGE: This collection of 35 articles represents the results of investigations over a period of several years on problems of hydrocarbon oxidation. The authors present their own theoretical and experimental data and also draw from current literature. No personalities are mentioned. References accompany most of the articles.

Sergeyev, P.G. (Deceased), R.V. Kiryan, and B.L. Golovanenko [Scientific Research Institute of Synthetic Alcohols and Organic Products]. Kinetics of the Thermal Decomposition of Certain Aliphatic-Aromatic Hydrogen Peroxides 207

The kinetics of the thermal decomposition of the hydroperoxides of isopropylbenzene and of s-butylbenzene, with and without solvents, is investigated at 100-130°C. It is shown that the thermal decomposition reactions of s-butylbenzene and isopropylbenzene hydroperoxides differ greatly.

Kucher, R.V., A.I. Yurzhenko, and M.A. Kovbuz [L'vovskiy gosudarstvennyy universitet imeni Ivana Franko (Lvov State University imeni Ivan Franko)]. Oxidation of Tertiary Hydrocarbons in Emulsions by Molecular Oxygen 212

The rate of hydrogen peroxide accumulation during the oxidation of isopropylbenzene by gaseous oxygen in alkaline emulsions of hydrocarbons was investigated. The presence of emulsifiers increases the rate of oxidation as a result of increased oxygen, hydrocarbon and hydrogen peroxide solubility in the aqueous phase. Solid bentonite emulsifiers were used. Isopropylbenzene is more easily oxidized than 1,1-diphenylethane.

Evenkova, M.S. [Moscow State University imeni M.V. Lomonosov]. Oxidation of Aromatic Hydrocarbons by Oxygen 220

The author explains the link between the structure of aromatic and [illegible] hydrocarbons and their stability with respect to oxygen at high temperatures (175-205°).

Yurzhenko, T.I., K.S. Grigor'yeva, N.V. Aref'yev, and M.R. Vilenskaya [L'vovskiy politekhnicheskiy institut (L'vov Polytechnical Institute)]. Chromatographic Synthesis of Alkylated Hydrogen Peroxides of the 1, 1-Diphenylethane Series 227

Mitskevich, N.I., and T.N. Sosnko [Institut khimii AN BSSR (Institute of Chemistry, Academy of Sciences BSSR)]. Conjugate Decarboxylization in the Autoxidation of Resin Acids 238

The authors have shown that this phenomenon is characteristic of the oxidation process of all resin acids. The results obtained are particularly important for understanding the chemistry of resin acid transformations.

Marayeva, V.V. [Moscow State University imeni M.V. Lomonosov]. Kinetics of the Reaction of Organic Peroxides With the Iodine Ion 245

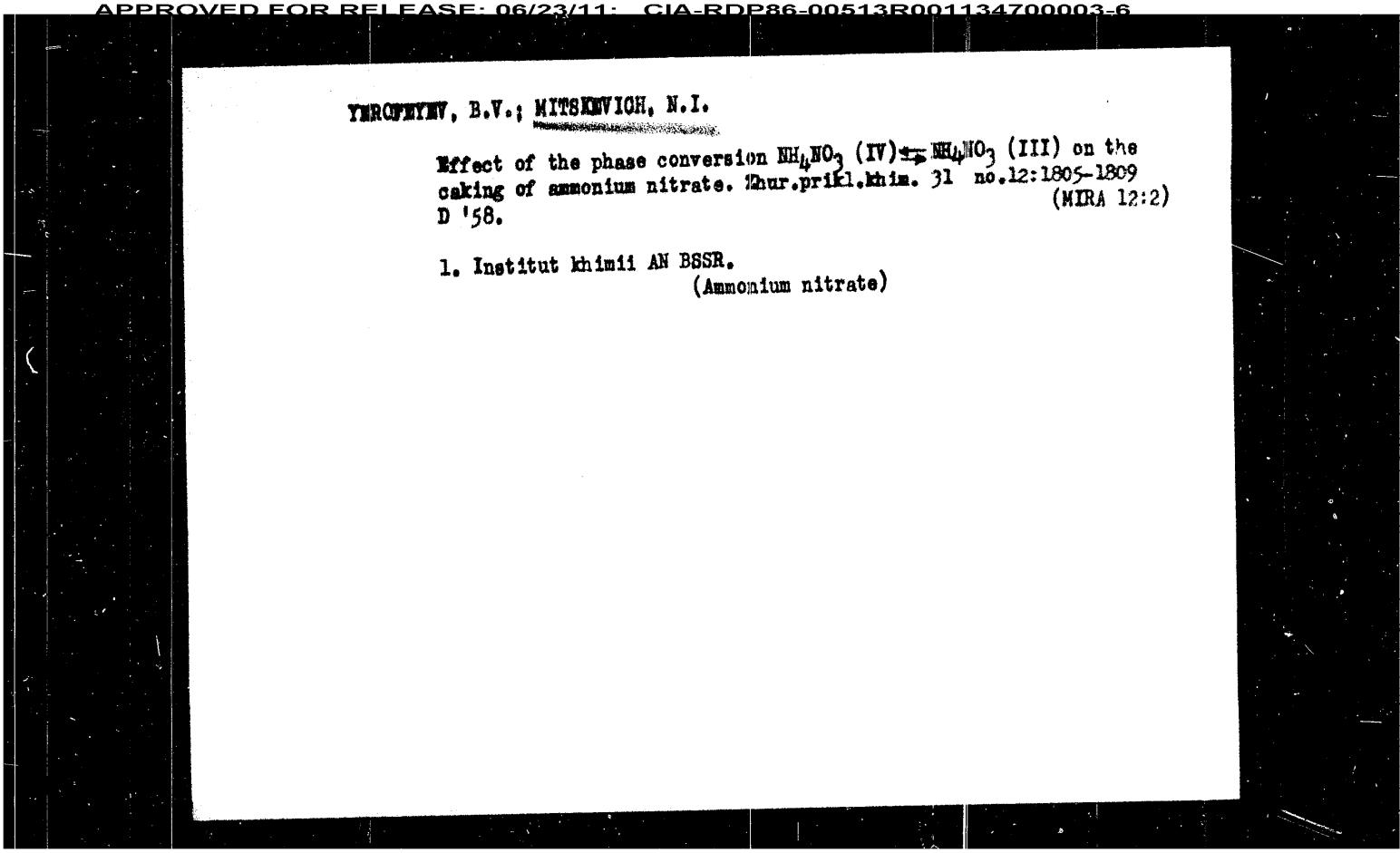
The author concludes from the kinetics of the separation of iodine by a given peroxide that it is possible to determine the peroxide qualitatively and quantitatively and to identify its class.

Goukhova, L.K. [Institute of Chemical Physics, Academy of Sciences USSR]. Quantitative Methods of Determining Fatty Acids of Normal Structure 249

The author has used paper chromatography to separate mixtures of hydroxamic acids up to C^4 and their derivatives, and the distillation method to separate methyl esters of acids above C5 with a carrier.

Moshkin, P.A. [Corresponding Member, Academy of Sciences USSR] [Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke nefti i gaza i polucheniya iskusstvennogo zhidkogo topliva (All-Union Scientific Research Institute of Petroleum and Gas Refining and of Synthetic Liquid Fuel Production)]. Oxidation of Solid Hydrocarbons to Obtain Synthetic Fatty Acids 255

The author discusses the composition of mixtures of synthetic fatty acids, data on neutral oxygen-containing compounds of "secondary nonsaponifiables" of the paraffin oxidation product, and [illegible]terial on the thermal [illegible]is of fats in nonalkaline media.



YEROFEYEV, B.V.; MITSKEVICH, N.I.

Effect of the phase conversion NH_4NO_3 (IV) $\rightleftarrows$ NH_4NO_3 (III) on the caking of ammonium nitrate. Zhur.prikl.khim. 31 no.12:1805-1809 D '58. (MIRA 12:2)

1. Institut khimii AN BSSR.
(Ammonium nitrate)

Collection of Scientific Works (Cont.) SOV/1285

Cherches, Kh.A. Nature of Sapinic Acid Isolated from the Resin of Norway Spruce 266

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Card 5/5

TM/3-20-59

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MITSKEVICH, N.I.

5(3) PHASE I BOOK EXPLOITATION SOV/1285

Akademiya nauk Belorusskoy SSR. Institut khimii

Sbornik nauchnykh rabot, vyp. 6 (Collection of Scientific Works of the Institute of Chemistry, Belorussian SSR Academy of Sciences, № 6) Minsk, Izd-vo AN Belorusskoy SSR, 1958. 271 p. 1,100 copies printed.

Ed.: Yerofeyev, B.V., Academician, BSSR Academy of Sciences; Tech. Ed.: Volokhanovich, I.

PURPOSE: The book is intended for chemists engaged in research in specialized fields.

COVERAGE: The book is a collection of scientific articles dealing with varied subjects, such as problems in electron theory of semiconductors, catalysis, autoxidation of abietic acid, thermodynamics of some reactions of sulfur organic compounds and reactions of alkyl, aryl, acyl-oxy radicals in the liquid phase. Personalities are mentioned in the individual articles. There are 331 references, of which 215 are Soviet, 75 English, 30 German, 10 French, and 1 Finnish.

Card 1/5

Conjugate Decarboxylation of the Autooxidation of Iso- 20-1-28/54
propylbenzene in a Mixture with Fatty Acids.

with the produced radical R. This reaction leads to the regeneration of the initial radical. Thus the reactions 2 - 4 are chain-transmission reactions. It was demonstrated an induction of the kind mentioned above really takes place.
(3 illustrations, 1 table and 7 Slavic references)

ASSOCIATION Institute for Chemistry of the Academy of Sciences of the Belorussian SSR.
(Institut khimii Akademii Nauk BSSR)

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Card 3/3

speed of isopropylbenzene is about four times higher in the [illegible] ce of an acid than without an acid. The initial speed was high [illegible] it decreased. Tab.1 shows the influence of the acid concentration [illegible] this speed. Addition of 1,04 % of isobutyric acid increases the [illegible] more than four-fold. Further additions of acid virtually do not [illegible] ge the amount of oxygen absorbed at all. However, they bring about [illegible] increase in the developing CO_2 more than six-fold, at a practically [illegible] changed amount of absorbed oxygen. The test results of the oxydation of isopropylbenzene in a mixture with radioactive acetic acid (la[illegible] on the carboxyl) confirms that the escaping CO_2, at least partly, [illegible] lops at the expense of the carboxyl group of the added acid. The [illegible] with oxydation of acetic, butyric, isobutyric and stearic acids under analogous conditions but without isopropylbenzene showed that neither an absorption of oxygen nor a formation of CO_2 takes place. The [illegible] amount of CO_2 escaping on this occasion probably represents a [illegible] which is connected with the autooxydation of these acids. A scheme [illegible] proposed for the conjugate decarboxylation process of organic acids with a simultaneous autooxydation of hydrocarbons. It consists of: 1. formation of the radical of isopropylbenzene peroxide, 2. interaction of this radical with the organic acid under formation of a acid radical, 3. the decarboxylation as such, 4. separation of a hydrogen atom from isopropylbenzene in the tertiary group due to interaction [illegible]

Card 2/3

MITSKEVICH, N.I.

AUTHOR: Mitskevich, N. I., Soroko, N. I., Yerofeyev, B. V., Academician, [illegible] /24
Belorussian SSR Academy of Sciences

TITLE: [illegible] Decarboxylation [illegible] the Autooxidation of [illegible]
in a Mixture with Fatty Acids.
(Sopryazhennoye dekarboksilirovaniye pri avtookislenii izopropil-
benzola v smesi s zhirnymi kislotami -Russian)

PERIODICAL: Doklady Akad.Nauk SSSR, 1957, Vol 115, Nr 1, pp 103-106 (U.S.S.R.)

ABSTRACT: It was shown by the authors in earlier papers that the low-temperature autooxydation of resinous acids is accompanied by a decarboxylation of these acids. In this connection it was interesting to find whether a conjugate decarboxylation of carbonic acids in a mixture with a hydrocarbon which are subject to autooxydation was possible. The tests made for this purpose show that an autooxydation of isopropyl benzene in a mixture with acetic, butyric, isobutyric and stearic [illegible] is actually accompanied by a conjugate decarboxylation. Thus the oxydation of the hydrocarbon induces the connected decarboxylation process of the acid (terminology by Shilov). Since the autooxydation of hydrocarbons, especially at higher temperatures, may lead to the formation of acids capable, in the course of further autooxydation, of a conjugate decarboxylation, the discovery of this phenomenon is of certain interest for the understanding of theoxydation chemism of hydrocarbons in general. The self-acting decarboxylation of fatty acids only takes place at considerably higher temperatures than the conjugate decarboxylation discovered by the authors. Ill.1 shows that the autooxidation

Card 1/3

USSR/Physical Chemistry - Kinetics, Combustion, Explosions, Topochemistry, Catalysis. B-9

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 441

these conditions a non-initiated reaction does not proceed. The initiator efficiency does not depend on the anion nature, salts of Co prove to be the most active. An increase of the initiator amount above 1% does not result in any further increase of the oxidation speed. The presence of hydrocarbons and CO_2 in the reaction products indicates that decarboxylation of I takes place together with oxidation.

Card 2/2

MITSKEVICH, N.I.

USSR/Physical Chemistry - Kinetics, Combustion, Explosions, Topochemistry, Catalysis. B-9

Abs Jour : Referat Zhur - Khimiya, No 1, 1958, 441

Author : N.I. Mitskevich, T.I. Soroko.

Inst : Academy of Sciences of White Russian SSR, Institute of Chemistry.

Title : Kinetics of Initiated Auto-Oxidation of Dehydroabietic Acid.

Orig Pub : Sb. nauchn. rabot. In-t khimii AN BSSR, 1956, vyp. 5(1), 174-187

Abstract : Acetates of Mn, Co, Ni, Cu and Pb and butyrate, stearate and dehydroabietate of Co were used at 85° as initiators of the auto-oxidation of the dehydroabietic acid (I) dissolved in naphthalene. The reaction kinetics was studied in a system static in reference to O_2 absorption. Under

Card 1/2

MITSKEVICH, N. I.

CONFERENCE ON KINETICS AND CHEMISM OF HYDROCARBON OXIDATION IN LIQUID PHASE

A conference on the kinetics and chemism of liquid phase hydrocarbon oxidation, called by the Academy of Sciences of the USSR, was held in Moscow from July the 2nd through July 6th, 1956. Over 200scientists and chemists from various cities of the USSR participated in this conference.

"Khimiya i tekhnologiya topliva", No. 8, 1956

[redacted]

N. I. MITSKEVICH and T. I. SOROKOV proposed to explain thechemism of decarboxylizing resin acids, connected with their autooxidation (using the oxidation of abietic and other acids as examples.

MITSKEVICH, N.I.

YEROFEYEV, B.V.; MITSKEVICH, N.I.

Relationship between the rate and depth of conversion in topochemical reactions as exemplified by polymorphic conversion of ammonium nitrate. Sbor.nauch.rab.Inst.khim.AN BSSR no.5:3-12 '56. (MLRA 10:5)

(Chemical reaction, Rate of)
(Ammonium nitrate)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134700003-6

MITSKEVICH N I

USSR/Organic Chemistry - Naturally Occurring Substances and Their Synthetic Analogs, E-

Abst Journal: Referat Zhur - Khimiya, No 1, 1957, 1034

Author: Yerofeyev, B. V., Mitskevich, N. I., and Soroko, T. I.

Institution: Academy of Sciences Belorussian SSR

Title: Conjugated Decarboxylation During the Autoxidation of Dehydroabietic Acid

Original Periodical: Izv. AN BSSR, 1955, No 2, 131-135 (published in Russian); Vestsi AN BSSR, 1955, No 2, 124-128 (published in Belorussian)

Abstract: It has been established that the autoxidation of dehydroabietic acid (I) is accompanied by decarboxylation. Heating colophony (3 hours at 340°) yields the "pyroacid," which is sulfonated; acid hydrolysis of the sulfodehydroabietic acid yields I, mp 172-173.5° (from alcohol) $[\alpha]_D$ + 63.77°. Autoxidation of I is carried out in naphthalene at 85 and 95° in the presence of Co-acetate (II) (one percent by weight based on I). The apparatus described previously (Referat Zhur - Khimiya,

Card 1/2

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134700003-6

MITSKEVICH, N. I.

USSR/Chemistry - Explosives Jan 53

"Kinetics of the Conversions of Polymorphous Modifications of Ammonium Nitrate. IV. Conversion NH_4NO_3(III) $\rightleftarrows$ NH_4NO_3(II)," B.V. Erofeyev and N.I. Mitskevich, Inst of Chem, Acad Sci, Belorussian SSR, Minsk

Zhur Fiz Khim, Vol 27, No 1, pp 118-124

The kinetics of the polymorphous conversion of the modification III of NH_4NO_3 to modification II, and the kinetics of the reverse conversion were investigated. The polymorphous conversions of the modifications of NH_4NO_3, III $\rightleftarrows$ II, proceed along a

268T19

curve of the autocatalytic type and, in general, are analagous to the previously-studied conversion IV $\rightleftarrows$ III. The topokinetic equation, $\alpha = 1 - \exp(-kt)^n$, adequately describes the kinetics of the conversion of the modifications of NH_4NO_3, i.e. III $\rightleftarrows$ II.

268T19

YEROFEYEV, B. V., and MITSKEVICH, N. I.

"Cryoscopic Determination of Phenol and Ortho-Cresol in Peat Petroleum," Izv. AN Belorus. SSR, No 5, pp 103-113, 1953

A tensiometric method (Yerofeyev, B. V., Uch. Zap. Kuybyshevsk. Gos. Ped. i Uchit. In-ta, 1943, No 7, 65) was used for the determination of the composition of the phenol fraction in peat petroleum (180-225 degrees). The phenol content was 14.3 ± 1.4%; the ortho-cresol content was 6.2± 0.5%. Naphthalene was not detected. (RZhKhim, No 20, 1954)

SO: Sum, No. 606, 5 Aug 55

MITSKEVICH, N. I.

FA 242T11

USSR/Chemistry - Ammonium Nitrate

Nov 52

"Kinetics of Conversions of Polymorphous Modifications of Ammonium Nitrate: III. Kinetics of the Conversion of NH_4NO_3(III) → NH_4NO_3(IV)," B. V. Yerofeyev and N. I. Mitskevich, Inst Chem, Acad Sci Belorussian SSR, Minsk

"Zhur Fiz Khim" Vol 26, No 11, pp 1631-1641

The authors state that the rate of conversion of NH_4NO_3 modifications III → IV, similar to the rate of conversion of IV → III, does not depend on the repetition of the expt. The rate of conversion of

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(1)

III → IV in expts conducted under identical conditions (of temp and time elapsed after the conversion of IV → III) is the same, within the margins of exptl error. Protracted keeping of III at the conversion temp of IV → II (35.0-36.0°) leads to a decrease in the rate of the subsequent conversion of III → IV. The preliminary initial heating of III at 55-60° also decreases the rate of the conversion III → IV. The kinetics of the conversion of the modifications NH_4NO_3 (III) → NH_4NO_3 (IV) can be expressed by the topokinetic eq $\alpha = 1 - \exp(-kt^n)$ throughout the whole range of the expts conducted with tested prepns. Crushing the compd leads to a decrease in the rate of conversion of NH_4NO_3(III) → NH_4NO_3(IV). The authors add that the temp dependence of the rate of conversion of the modifications NH_4NO_3III → IV is not subject to the Arrhenius eq. The temp coeff of the rate of conversion III → IV is neg.

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(6)

MITSKEVICH, N. I.

USSR/Chemistry - Explosives Jun 52

"Kinetics of Transformations of Polymorphous Modifications of Ammonium Nitrate. III. Effect of Conditions of Preliminary Treatment on the Rate of the Transformation NH_4NO_3 (IV) $\rightarrow$ NH_4NO_3 (III)," B. V. Erofeyev, N.I. Mitskevich, Inst of Chem, Minsk, Acad Sci Belorussian SSR

"Zhur Fiz Khim" Vol XXVI, No 6, pp 848-861

Discusses results of the investigation of effects of drying, recrystn, and mech disintegration on the rate of transformation IV→III (cf. "Zhur Fiz Khim" Vol XXIV, 1235, 1950).

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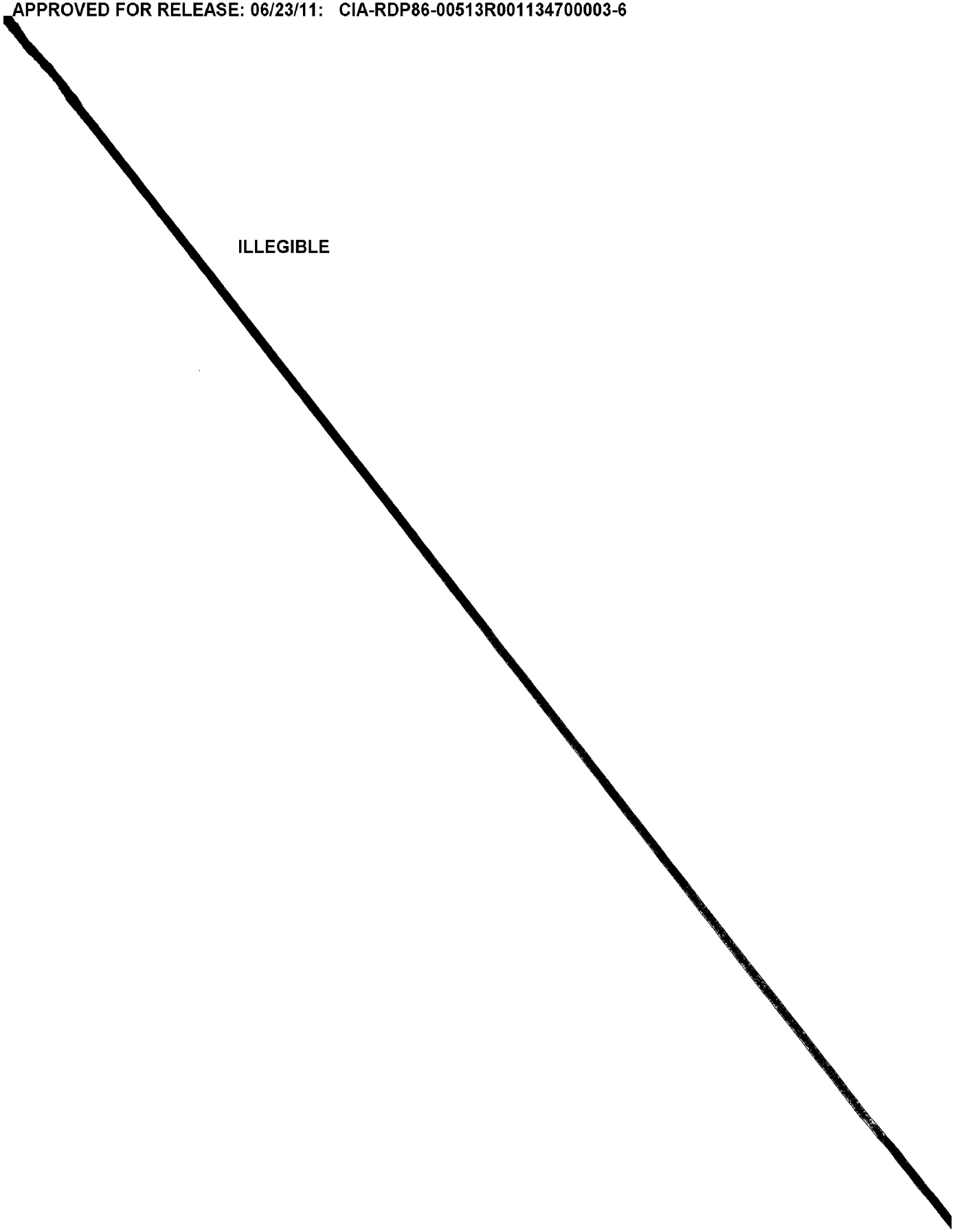

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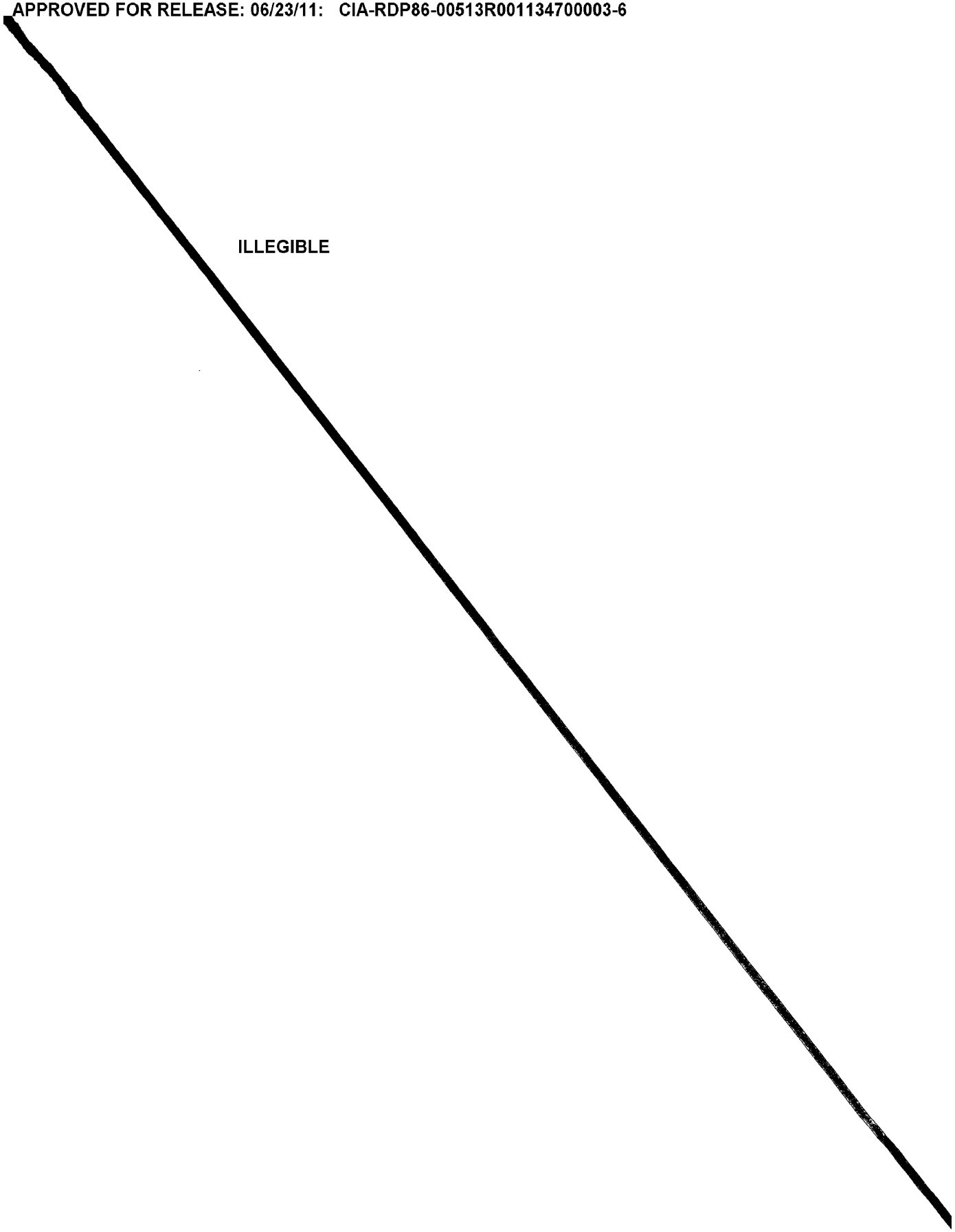

Mitskevich, N. I. Cand Chem Sci

Dissertation: "Kinetics of Polymorphous Transformations of the Modifications of Ammonium Nitrate IV-III and III-II."

28 September 49

Moscow Order of Lenin State U imeni M. V. Lomonosov.

SO Vecheryaya Moskva
Sum 71

MITSKEVICH, N.I.; USKOV, I.I.

Induction factor changes in decarboxylation of isobutyric acid combined with its autoxidation. Dokl. AN BSSR 9 no. 11:733-735 N '65 (MIRA 19:1)

1. Institut fiziko-organicheskoy khimii AN BSSR.

SOV/124-57-3-3506

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 3, p 126 (USSR)

AUTHORS: Gubkin, S. I., Mitskevich, N. I.

TITLE: The Normal-stress Distribution Along the Surface of Metals Subjected to Open-die Upsetting (Raspredeleniye normal'nykh napryazheniy na kontaktnoy poverkhnosti pri svobodnom osazhivanii metallov)

PERIODICAL: Sb. nauch. tr. Fiz.-tekhn. in-ta AN BSSR, 1955, Nr 2, pp 37-53

ABSTRACT: Bibliographic entry

Card 1/1

MITSKEVICH, N.I.

Device for determining normal stresses in the free swaging of metals. Sbor.nauch.trud. Fiz.-tekh.inst.AN BSSR no.2:23-36 '55. (MLRA 10:1)

(Strain gauges) (Forging)

Mitskevich, N. L. and Gubkin, S. L.

"Distribution of Normal Stresses on the Contact Surface During Open Die Upsetting of Metals", Sbornik Nauchnov Trudov, Vol 2, Publishing House of the Academy of Sciences, Belorussian S.S.R., Minsk, 1955, 250 pp.

MITSKEVICH, N.I.; SOKALAVA, Ye.I.

Work schedule of shaft furnaces for gas cementation of steel products. Vestsi AN BSSR no.2:87 Mr-Ap '54. (MLRA 8:9)
(Metallurgical furnaces) (Cementation (Metallurgy))

MITSKEVICH, N. I.

"Development of an Experimental Method of Determining Normal Stress on Contact Surfaces During Plastic Deformations." Cand Tech Sci, Belorussian Polytechnic Inst, Minsk, 1954. (RZhMekh, Mar 55)

SO: Sum. No. 670, 29 Sep 55--Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (15)

steel E. The measurements are made for direct and reversed polarity with fluctuating and aperiodic types of discharge, the contour parameters being chosen so that the amplitude values of the currents in oscillating and aperiodic discharge remain identical. It is found that the magnitude of EE of a steel E working in conjunction with a porous one is virtually independent of the composition of the porous E. However, the magnitude of the EE of the porous E declines as the Cu contents of the E rises and becomes negative, meaning that the weight of the E increases. Study under the binocular microscope of E surfaces subjected to EE shows the pores of the E to become filled with fused metal both from the opposing E and from the porous E itself. As this occurs, irregularities are smoothed over somewhat, and a crust consisting of a mixture of materials from both E is formed It is shown that a rise in the number of discharges results in further change in the E surface consisting in a reduction in pore size and formation of a protective layer, which is spongy in structure, comprising a mixture of materials from both E. The mechanical impulse transmitted to the porous E is greater than that of the solid. The difference in the results for oscillating and aperiodic discharges is only quantitative. It is noted that as the porosity of E declines, their EE tends to approximate the EE of solid E.

Card 2/2 L.G.

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 10, p 247 (USSR) SOV/137-57-10-20152

AUTHORS: Nekrashevich, I.G., Bakuto, I.A., Mitskevich, M.Ye.

TITLE: Aspects of Electrical Erosion of Porous Electrodes (Ob osobennostyakh elektricheskoy erozii poristykh elektrodov)

PERIODICAL: Sb. nauch. tr. Fiz.-tekhn. in-t, AN ESSR, 1956, Nr 3, pp 227-233

ABSTRACT: An investigation is made of electrical erosion (EE) of porous electrodes (E) used as tools in electric-spark machining. The porous E are made by extrusion of Cu-Pb and Cu-Fe chip mixtures. The particles are not classified by size, and various mixtures are used. To obtain E of approximately identical porosity, equal initial volumes of chip are taken, and they are reduced to identical volume by the press. Before testing, the extruded E are held for several hours in kerosene, which is used as the working medium. Investigation of the behavior of the E on the spark discharge is performed on a ballistic range. Measurement is made not only of the mechanical impulse communicated to the E upon a single discharge, but of the magnitude of the anode and cathode EE of extruded E and of the opposing

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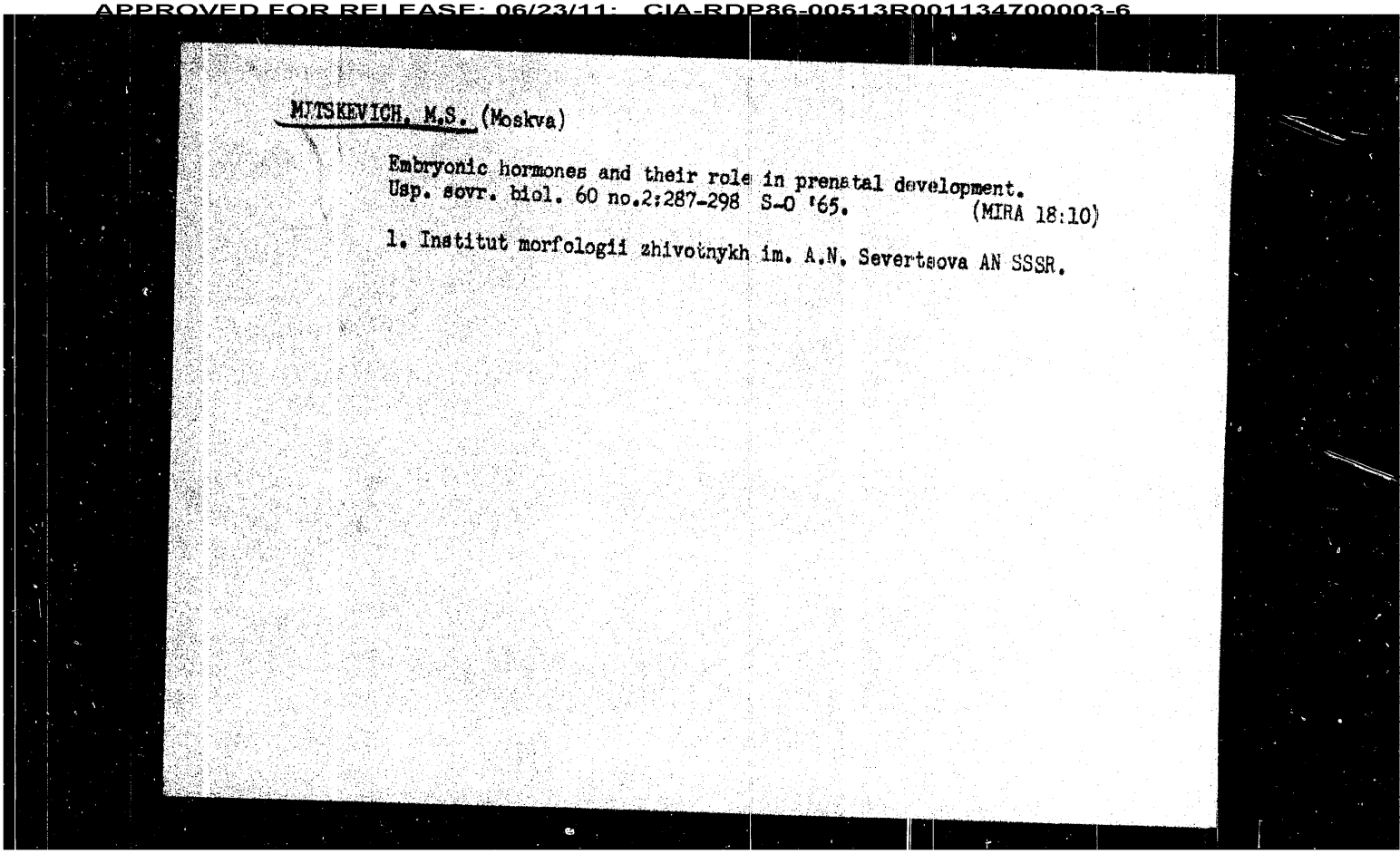

MITSKEVICH, M.S. (Moskva)

Embryonic hormones and their role in prenatal development.
Usp. sovr. biol. 60 no.2:287-298 S-O '65. (MIRA 18:10)

1. Institut morfologii zhivotnykh im. A.N. Severtsova AN SSSR.

MITSKEVICH, M.S.

Fourth International Symposium on Comparative Endocrinology.
Usp. sovr. biol. 60 no.1:146-151 Jl-Ag '65.
(MIRA 18:8)

MITSKEVICH, M.S.

Third International Symposium on Comparative Endocrinology. Usp. soor. biol. 53 no.1:132-136 '62. (MIRA 15:5)
(ENDOCRINOLOGY--CONGRESSES)

MITSKEVICH, M.S.

International symposium on comparative endocrinology. Zool. zhur. 41 no.5:794-797 My '62. (MIRA 15:6)
(Endocrinology—Congresses)

MITSKEVICH, M.S., doktor kholeg.nauk

Laws governing the ontogeny of farm animals. Vest. AN SSSR 32 no.12:108-109 D '62. (MIRA 15:12)
(Stock and stockbreeding—Congresses)

MITSKEVICH, M.S.

Hormonal interrelations between mother and fetus in mammals.
Zhur. ob. biol. 23 no.1:35-44 Ja-F '62. (MIRA 15:3)

1. Institute of Animal Morphology, U.S.S.R. Academy of Sciences.
(FETUS) (HORMONES)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134700003-6

MITSKEVICH, Mikhail M.

"Hormonal relationship between mother and fetus in mammals"

paper to be submitted for the 3rd International Symposium on Endocrinology (Compartive), Oiso, Japan, 6-10 June 1961.

Deputy Director of the Institute of Animal Morphology imeni A. N. Svertsov, Moscow.

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134700003-6

VICHI, E. [Witschi, E.]; DEYL, E. (SShA) [Dale, E.]; MITSKEVICH, M.S. [translator]

Steroid hormones in early development. Usp. soor. biol. 53 no.1: 124-129 '62. (MIRA 15:5)
(STEROIDS) (GENERATIVE ORGANS)

MITSKEVICH, M.S.

First International Congress of Endocrinologists. Usp. sovr. biol. 51 no.1:120-124 Ja-F '61. (MIRA 14:3)
(ENDOCRINOLOGY—CONGRESSES)

STUDITSKIY, Aleksandr Nikolayevich; IGNAT'YEVA, Zinaida Pavlovna; MITSKEVICH, M.S., doktor biolog. nauk, otv. red.; KOLPAKOVA, Ye.A., red. izd-va; UL'YANOVA, O.G., tekhn. red.

[Regeneration of muscles in higher mammals] Vosstanovlenie myshts u vysshikh mlekopitaiushchikh. Moskva, Izd-vo Akad. nauk SSSR, 1961. 190 p. (MIRA 14:8)
(REGENERATION (BIOLOGY)) (MUSCLE)

STUDITSKIY, Aleksandr Nikolayevich; MITSKEVICH, M.S., otv.red.; LEVINSON, L.B., red.izd-va; GINTSBURG, G.I., red.[redacted]; GUSEVA, I.N., tekhn.red.

[Experimental surgery of muscles] Eksperimental'naia khirurgiia myshts. Moskva, Izd-vo Akad.nauk SSSR, 1959. 337 p. (MIRA 12:12)

1. Laboratoriya gistologii Instituta morfologii zhivotnykh im. A.N.Severtsova Akademii nauk SSSR (for Studitskiy, Gintsburg).
(MUSCLES--SURGERY)